

APPLICANT(S): IDAN, Gavriel J. et al.
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REMARKS

The present Response is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in condition for allowance. Applicants assert that the present invention is new, non-obvious and useful. Prompt consideration and allowance of the claims is respectfully requested.

Status of Claims

Claims 1-15, 18, 24-30, 32-33, 35-36, 38-40, 43-48 and 50 are pending in this application and have been rejected.

Claims 1, 6, 14, 15, 18, 32, 36, 38, 39, 43 and 45 have been amended herein. Claims 13, 35 and 44 have been canceled herein. Applicants assert that no new matter has been added by the claim amendments.

Claim Objections

In the Office Action, the Examiner objected the claim 33 as lacking sufficient antecedent basis for the limitation "the housing" as recited on lines 1-2 of the claim. In response, claim 33 has been amended to replace "the housing" with "the outer covering", in accordance with the Examiner's suggestion.

Double Patenting

In the Office Action, the Examiner objected to claim 10 under 37 C.F.R. 1.75 as being a substantial duplicate of claim 3. Applicants disagree and point out that claim 3 refers to the specific shape of the housing and that claim 10 refers to the specific shape of the sensing device. While the Examiner states that this is a "slight difference in wording", Applicants note that claim 1, from which both claims 3 and 10 depend, specifically recites "a housing comprising at least one sensing device ...", i.e., claim 1 refers to the housing and the sensing device as separate elements. Therefore, because claims 3 and 10 each limits the shape of a distinct element, claims 3 and 10 cannot be substantial duplicates of each other. Accordingly, Applicants request that the Examiner withdraw this rejection.

35 U.S.C. § 103 Rejections

In the Office Action, the Examiner rejected claims 1, 3, 7, 10-14, 24-30, 32, 35-36, 40, 43-48 and 50 under 35 U.S.C. § 103(a) as being unpatentable over Mullick et al. (U.S. Patent Application Publication No. 2003/0167000) in view of Canton (U.S. Patent No. 6,145,393). Applicants respectfully traverse the rejection.

Mullick et al. teach an in-vivo capsule that may include an imaging array and can be configured to perform multiple diagnostic or therapeutic operations. However, as the Examiner admits, Mullick et al. fail to explicitly teach an optical stabilization platform comprising at least one friction reducing mechanism or liquid, at least one ballast weight or at least one directional activator.

Canton teaches a floated gimbal optical platform for providing a stable optical path for optical instruments. Further, the device of Canton is meant to stabilize optical instruments in turbulent and dynamic environments which serves to maintain the optical device at a fixed attitude and correcting the attitude internally as necessary. (See Canton, at col. 1, lines 12-13; col. 2, line 64 - col. 3, line 6).

The Examiner asserts that Mullick et al. teach a vehicular in-vivo system that can include a machined mechanical stabilization platform to stabilize the image, and since Canton teaches a sensing device having a stabilization platform for stabilizing images that could be mounted on a vehicular device, it would have been obvious to one of ordinary skill in the art to provide the system of Mullick et al. with an optical platform having a friction-reducing mechanism as taught by Canton in order to achieve an in-vivo system having an imaging device that is able to float in neutral buoyancy thereby stabilizing images recorded by the moving imaging device.

The Examiner further asserts that Mullick et al. teach an image stabilization system that includes miniature motors to allow the imaging system to be reoriented, and since Canton teaches a pair of magnets for repositioning the imaging device with respect to the viewing port, it would have been obvious to one of ordinary skill in the art to provide the

system of Mullick et al. with a pair of magnets as taught by Canton in order to selectively reorient the imaging device.

The Examiner further asserts that Mullick et al. teach an in-vivo sensing device that allows the in-vivo sensing device to be reoriented, which could include a remote control, and since Canton teaches a sensing device that can become misaligned with the viewing port of the housing such that a pump would thrust the friction reducing liquid into the housing to correct the misalignment or orient the sensing device to observe through any portion of the hemisphere of the viewing port of the housing, it would have been obvious to one of ordinary skill in the art to provide the system of Mullick et al. with a liquid that is introduced during use as taught by Canton in order to correct any misalignment occurring during use or to orient the sensing device to observe through any portion of the hemisphere of the viewing port.

Applicants have herein amended independent claims 1 and 32 to recite an in-vivo sensing system comprising a housing (or outer covering) having a sensing device and at least one directional activator, or magnet, within the sensing device, and a friction reducing mechanism disposed between the housing (or outer covering) and the sensing device; and at least one directional actuator external to the housing to control said directional activator. Dependent claims 14 and 36 have been amended to recite that the directional actuator comprises a magnetic field generator. Applicants have also herein amended independent claim 43 to recite the steps of inserting within a body lumen an in-vivo sensing device comprising a magnet, being disposed within a housing and being surrounded by a friction reducing material within said housing, and enabling said in vivo sensing device to be moved in a friction-reduced manner by application of an external force to said in-vivo sensing device. These amendments find support in the specification as filed, for example at page 10, line 7 - page 11, line 2. Claims 13, 35 and 44 have been canceled herein.

Applicants assert that the device of Canton is designed to automatically adjust the attitude of an optical device only when the device itself detects that attitude has changed. The purpose of the device taught by Canton is to *maintain a certain field of view* despite the movement of the surrounding environment in which the device is placed. The device of Canton accomplished this through the use of a pair of magnets, e.g., magnets 27A and 27B in Fig. 10, within the imaging device to correct the attitude of the device.

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By contrast, Applicants' device is intended to adjust the attitude and direction of the imaging device in response to a signal from outside the in-vivo environment in order to *change the field of view* of the imaging device. Applicants' claimed system requires at least one directional activator (i.e., magnet) situated within the imaging device housing and at least one directional actuator (i.e., magnetic field generator) external to the housing or outer covering of the in-vivo sensing system with which to control the attitude and direction of the imaging device.

Applicants further assert that Mullick et al. and Canton, alone or in combination, do not teach or suggest a system comprising a housing having at least one directional activator within the imaging device and at least one directional actuator external to the housing or outer covering of the device to control the at least one directional actuator, as recited in amended independent claims 1 and 32. Nor do Mullick et al. and Canton, alone or in combination, teach or suggest a method comprising the steps of inserting within a body lumen an in-vivo sensing device comprising a magnet, being disposed within a housing and being surrounded by a friction reducing material within said housing, and enabling said in vivo sensing device to be moved in a friction-reduced manner by application of an external force to said in-vivo sensing device, as recited in amended independent claim 43. Amended independent claims 1, 32 and 43 are therefore allowable. Dependent claims 3, 7, 10-12, 14, 24-30, 36, 40, 45-48 and 50 include all the limitations of one of amended independent claims 1, 32 and 43, and are therefore likewise allowable. Applicants therefore request that the Examiner withdraw the rejection.

In the Office Action, the Examiner rejected claim 2 under 35 U.S.C. § 103(a) as being unpatentable over Mullick et al. in view of Canton and further in view of Von Alten (U.S. Patent No. 6,929,636). Applicants respectfully traverse the rejection.

Von Alten teaches a device dispensing medication in-vivo in response to a sensed parameter. The Examiner asserts that it would have been obvious to one of ordinary skill in the art to provide the system of Mullick et al. as modified by Canton with a housing that includes glass as taught by Von Alten in order to achieve a housing that is inert or biocompatible in the human body.

Applicants assert that Von Alten fails to teach a directional activator or a directional actuator as recited by amended independent claim 1, and Von Alten does not solve the deficiencies of Mullick et al. and Canton. Applicants further assert that Mullick et al., Canton and Von Alten, alone or in combination, do not teach or suggest the system as recited in amended independent claim 1, such that amended independent claim 1 is allowable. Dependent claim 2 includes all the limitations of amended independent claim 1 and is therefore likewise allowable. Applicants therefore request that the Examiner withdraw the rejection.

In the Office Action, the Examiner rejected claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Mullick et al. in view of Canton and further in view of Bucalo (U.S. Patent No. 4,172,446). Applicants respectfully traverse the rejection.

Bucalo teaches an apparatus for collecting body fluids at an internal cavity of the body of a living being. The Examiner asserts that, since Bucalo teaches an in-vivo system comprising a pre-collapsed housing for generating suction in vivo based on a condition prevailing in the body cavity, it would have been obvious to one of ordinary skill in the art to provide the system of Mullick et al. as modified by Canton with a collapsible housing as taught by Bucalo in order to achieve a suction generating mechanism that is activated based on a condition prevailing in the body cavity in vivo to improve or enhance visualization, diagnostic or therapeutic function of the in-vivo system.

Applicants assert that Bucalo fails to teach a directional activator or a directional actuator as recited by amended independent claim 1, and Bucalo does not solve the deficiencies of Mullick et al. and Canton. Applicants further assert that Mullick et al., Canton and Bucalo, alone or in combination, do not teach or suggest the system as recited in amended independent claim 1, such that amended independent claim 1 is allowable. Dependent claim 4 includes all the limitations of amended independent claim 1 and is therefore likewise allowable. Applicants therefore request that the Examiner withdraw the rejection.

In the Office Action, the Examiner rejected claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Mullick et al. in view of Canton and Bucalo and further in view of Kovacs et al. (U.S. Patent Number 5,833,603). Applicants respectfully traverse the rejection.

Kovacs et al. teach a biosensing transponder for implantation in an organism such as a human. The Examiner asserts that it would have been obvious to one of ordinary skill in the art to provide the system of Mullick and modified by Canton and Bucalo with a semi-permeable membrane as taught by Kovacs et al. in order to achieve an ion-selective chemical sensor using an electrochemical measurement such as impedance, spectroscopy, voltammetry, and amperometry.

Applicants assert that Kovacs et al. fail to teach a directional activator or a directional actuator as recited by amended independent claim 1, and Kovacs et al. do not solve the deficiencies of Mullick et al., Canton and Bucalo. Applicants further assert that Mullick et al., Canton, Bucalo and Kovacs et al., alone or in combination, do not teach or suggest the system as recited in amended independent claim 1, such that amended independent claim 1 is allowable. Dependent claim 5 includes all the limitations of amended independent claim 1 and is therefore likewise allowable. Applicants therefore request that the Examiner withdraw the rejection.

In the Office Action, the Examiner rejections claims 6, 8-9, 18, 33 and 38-39 under 35 U.S.C. § 103(a) as being unpatentable over Mullick et al. in view of Canton and further in view of Kilcoyne et al. (U.S. Patent No. 6,285,897). Applicants respectfully traverse this rejection.

Kilcoyne et al. teach a system for detecting, recording, and analyzing various physiological parameters in the portions of the gastrointestinal tract. The Examiner asserts that it would have been obvious to one of ordinary skill in the art to provide the system of Mullick et al. as modified by Canton with a housing that includes a hydrocarbon as taught by Kilcoyne et al..

Applicants assert that Kilcoyne et al. fail to teach a directional activator or a directional actuator as recited by amended independent claims 1 and 32, and Kilcoyne et al.

do not solve the deficiencies of Mullick et al. and Canton. Applicants further assert that Mullick et al., Canton and Kilcoyne et al., alone or in combination, do not teach or suggest the system as recited in amended independent claims 1 and 32, such that amended independent claims 1 and 32 are allowable. Dependent claims 6, 8-9, 18, 33 and 38-39 include all the limitations of amended independent claims 1 or 32 and are therefore likewise allowable. Applicants therefore request that the Examiner withdraw the rejection.

In the Office Action, the Examiner rejected claim 15 under 35 U.S.C. § 103(a) as being unpatentable over Mullick et al. in view of Canton and further in view of DiCarlo (U.S. Patent Application Publ. No. 2003/0004562). Applicants respectfully traverse the rejection.

DiCarlo teaches an endoluminal device including a prosthesis and at least one indicator member affixed to the prosthesis that can detect an change in prosthesis morphology. The Examiner asserts that since Mullick et al. teach an in-vivo sensing device that allows the in-vivo sensing device to be reoriented, which would include a remote control, and Canton teaches a sensing device that can be selectively repositioned or rotated using a set of electromagnets, it would have been obvious to one of ordinary skill in the art to provide the system of Mullick et al. as modified by Canton with a magnetic switch as taught by DiCarlo in order to achieve an in-vivo sensing device that can selectively be reoriented remotely.

Applicants assert that DiCarlo fails to teach a directional activator or a directional actuator as recited by amended independent claim 1, and DiCarlo does not solve the deficiencies of Mullick et al. and Canton. Applicants further assert that Mullick et al., Canton and DiCarlo, alone or in combination, do not teach or suggest the system as recited in amended independent claim 1, such that amended independent claim 1 is allowable. Dependent claim 15 includes all the limitations of amended independent claim 1 and is therefore likewise allowable. Applicants therefore request that the Examiner withdraw the rejection.

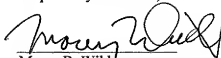
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In view of the foregoing amendments and remarks, Applicants assert that the pending claims are allowable. Their favorable reconsideration and allowance is respectfully requested.

Should the Examiner have any question or comment as to the form, content or entry of this Amendment, or if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to contact the undersigned at the telephone number below.

Please charge any fees that are due to deposit account No. 50-3355.

Respectfully submitted,



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Dated: July 15, 2009

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